

# **EAST Search History**

*Updated Search*  
10/776,031

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	2440	(primary or mirror or redundant) adj disk	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/05/15 11:41
L2	559	(writ\$4 or write-back or "write back") same L1	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/05/15 11:41
L3	1018860	((logical adj block address) or LBA)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/05/15 11:41
L4	74	2 same L3	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/05/15 11:41
L5	36	4 same (defect\$3 or error\$3 or fault\$ or bad or dirty or problem or malfunction or fail\$3)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/05/15 11:47
L6	6	5 same (disk adj3 (portion or sector or block or section))	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/05/15 11:48
L7	2203	(714/6).ccls.	US-PGPUB; USPAT; USOCR	OR	ON	2007/05/15 11:53
L8	718	(714/7).ccls.	US-PGPUB; USPAT; USOCR	OR	ON	2007/05/15 11:53
L9	579	(714/710).ccls.	US-PGPUB; USPAT; USOCR	OR	ON	2007/05/15 11:53
L10	258	(714/711).ccls.	US-PGPUB; USPAT; USOCR	OR	ON	2007/05/15 11:53

## EAST Search History

L11	291	(714/723).cccls.	US-PGPUB; USPAT; USOCR	OR	ON	2007/05/15 12:05
L12	480	(714/8).cccls.	US-PGPUB; USPAT; USOCR	OR	ON	2007/05/15 12:05
L13	1329	(714/25).cccls.	US-PGPUB; USPAT; USOCR	OR	ON	2007/05/15 12:05
L14	15255	(detect\$3 or track\$3 or check\$3) same (defect\$3 or error\$3 or fault\$ or bad or dirty or problem or malfunction or fail\$3) same sector	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/05/15 12:08
L15	5961	(replacement or remapp\$3 or substitut\$3 or recover\$3 or mirror or primary or redindant) adj (sector or block)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/05/15 12:08
L16	271	L15 same L14	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/05/15 12:09
L17	317	recover\$3 near3 (read adj error)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/05/15 12:09
L18	2	16 same L17	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/05/15 12:12
L19	1	5 and 15 and 17	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/05/15 12:12

## EAST Search History

L20	0	5 and 7 and 17	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/05/15 12:12
L21	0	5 and 8 and 17	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/05/15 12:12
L22	0	5 and 9	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/05/15 12:13
L23	0	5 and 10	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/05/15 12:13
L24	0	5 and 11	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/05/15 12:13
L25	3	5 and 12	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/05/15 12:13
L26	0	5 and 13	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/05/15 12:13
S1	2	("6506559").PN.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2006/10/18 11:08

## EAST Search History

S2	6	("5159671" "6088815" "6795895").PN.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/10/18 11:21
S3	6	("5166936") or ("5271018") or ("5974544").PN.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2006/10/18 11:43
S4	1973	(714/6).ccls.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/05/15 11:53
S5	671	(714/7).ccls.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/10/18 11:35
S6	517	(714/710).ccls.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/10/18 11:36
S7	251	(714/711).ccls.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/10/18 11:36
S8	359	(714/723).ccls.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/10/18 11:36
S9	809	(stewart-william\$).in.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/10/18 11:40

## EAST Search History

S10	303	recover\$3 near3 (read adj error)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/10/18 11:44
S11	13033	(detect\$3 or track\$3 or check\$3) same (error\$3 or fault\$ or bad or dirty or problem or malfunction or fail\$3) same sector	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/10/18 11:53
S12	13870	((logical adj block address) or LBA)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/10/18 12:32
S13	14338	(detect\$3 or track\$3 or check\$3) same (defect\$3 or error\$3 or fault\$ or bad or dirty or problem or malfunction or fail\$3) same sector	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/05/15 11:47
S14	2286	(primary or mirror or redundant) adj disk	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/10/18 11:57
S15	3144	(replacement or remapp\$3 or substitud\$3 or recover\$3) adj (sector or block)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/05/15 12:08
S16	6	S12 and S13 and S14 and S15	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/10/18 12:33
S17	1	S16 and S10	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/10/18 12:00

## EAST Search History

S18	9	S12 and S14 and S15 and ((defect\$3 or error\$3 or fault\$ or bad or dirty or problem or malfunction or fail\$3) near3 (sector or block))	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/10/18 12:46
S19	3	S18 not S16	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/10/18 12:22
S20	951698	((logical adj block address) or LBA)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/10/18 12:35
S21	15	S20 and S13 and S14 and S15	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/10/18 12:36
S22	9	S21 not S16	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/10/18 12:33
S23	9	S22 not S19	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/10/18 12:33
S24	6040	((logical adj block adj address) or LBA)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/10/18 12:35
S25	3	S24 and S13 and S14 and S15	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/10/18 12:36

## EAST Search History

S26	4	S24 and S14 and S15 and ((defect\$3 or error\$3 or fault\$ or bad or dirty or problem or malfunction or fail\$3) near3 (sector or block))	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/10/18 12:41
S27	5598	(replacement or remapp\$3 or substitud\$3 or recover\$3 or mirror or primary or redindant) adj (sector or block)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/10/18 12:46
S28	165	S27 and S24 and ((defect\$3 or error\$3 or fault\$ or bad or dirty or problem or malfunction or fail\$3) near3 (sector or block))	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/05/15 11:47
S29	1	S28 and (S2 or S3)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/10/18 12:50
S30	49	S28 and ("714"/\$.ccls.)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/10/18 12:51
S31	14	S30 and RAID	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/10/18 13:16
S32	35	S30 not S31	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/10/18 13:16
S33	1	"5708769".PN.	USPAT; USOCR	OR	ON	2006/10/18 13:35
S34	1	"5619723".PN.	USPAT; USOCR	OR	ON	2006/10/18 13:35
S35	1	"5592648".PN.	USPAT; USOCR	OR	ON	2006/10/18 13:35
S36	1	"5519844".PN.	USPAT; USOCR	OR	ON	2006/10/18 13:35

## EAST Search History

S37	1	"4943966".PN.	USPAT; USOCR	OR	ON	2006/10/18 13:36
S38	1	"4802117".PN.	USPAT; USOCR	OR	ON	2006/10/18 13:36



Updated Search  
10/776,031
[Subscribe \(Full Service\)](#) [Register \(Limited Service, Free\)](#) [Login](#)

 Search: ☒ The ACM Digital Library ☐ The Guide


[Feedback](#) [Report a problem](#) [Satisfaction survey](#)

## Terms used

write back and disk sector and logical block address and replacement sector and remap and recover and read error

 Found  
40,005  
of  
201,062

 Sort results by 

 Display results 
☒ [Save results to a Binder](#)
☒ [Search Tips](#)
☐ [Open results in a new window](#)
[Try an Advanced Search](#)
[Try this search in The ACM Guide](#)

Results 1 - 20 of 200

 Result page: [1](#) [2](#) [3](#) [4](#) [5](#) [6](#) [7](#) [8](#) [9](#) [10](#) [next](#)

Best 200 shown

 Relevance scale ☐ ☐ ☐ ☐ ☐
1 [IRON file systems](#)

Vijayan Prabhakaran, Lakshmi N. Bairavasundaram, Nitin Agrawal, Haryadi S. Gunawi, Andrea C. Arpaci-Dusseau, Remzi H. Arpaci-Dusseau

 October 2005 **ACM SIGOPS Operating Systems Review , Proceedings of the twentieth ACM symposium on Operating systems principles SOSP '05**, Volume 39 Issue 5

Publisher: ACM Press

Full text available: pdf(323.82 KB)

 Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

Commodity file systems trust disks to either work or fail completely, yet modern disks exhibit more complex failure modes. We suggest a new *fail-partial failure model* for disks, which incorporates realistic localized faults such as latent sector errors and block corruption. We then develop and apply a novel *failure-policy fingerprinting* framework, to investigate how commodity file systems react to a range of more realistic disk failures. We classify their failure policies in a new ...

**Keywords:** IRON file systems, block corruption, disks, fail-partial failure model, fault tolerance, internal, latent sector errors, redundancy, reliability, storage

2 [Essays in computing science](#)

C. A. R. Hoare

January 1989 Book

Publisher: Prentice-Hall, Inc.

Full text available: pdf(20.91 MB)

 Additional Information: [full citation](#), [abstract](#), [references](#), [cited by](#), [review](#)

Charles Antony Richard Hoare is one of the most productive and prolific computer scientists. This volume contains a selection of his published papers. There is a need, as in a Shakespearian Chorus, to offer some apology for what the book manifestly fails to achieve. It is not a complete 'collected works'. Selection between papers of this quality is not easy and, given the book's already considerable size, some difficult decisions as to what to omit have had to be made. Pity the editor weighin ...

3 [Using model checking to find serious file system errors](#)

Junfeng Yang, Paul Twohey, Dawson Engler, Madanlal Musuvathi

 November 2006 **ACM Transactions on Computer Systems (TOCS)**, Volume 24 Issue 4

Publisher: ACM Press

Full text available: pdf(534.00 KB)

 Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

This article shows how to use model checking to find serious errors in file systems. Model checking is a


[Subscribe \(Full Service\)](#) [Register \(Limited Service, Free\)](#) [Login](#)

 Search: ☒ The ACM Digital Library ☐ The Guide

write back and disk sector and logical block address and replac


[Feedback](#) [Report a problem](#) [Satisfaction survey](#)

Terms used

write back and disk sector and logical block address and replacement sector and remap and recover and read error

 Found  
40,005  
of  
201,062

 Sort results by 

 Display results 
[Save results to a Binder](#)
[Search Tips](#)
☐ [Open results in a new window](#)
[Try an Advanced Search](#)
[Try this search in The ACM Guide](#)

Results 81 - 100 of 200

 Result page: [previous](#) [1](#) [2](#) [3](#) [4](#) [5](#) [6](#) [7](#) [8](#) [9](#) [10](#) [next](#)

Best 200 shown

 Relevance scale ☐ ☐ ☐ ☐ ☐

### 81 [An open operating system for a single-user machine](#)



Butler W. Lampson, Robert F. Sproull

 December 1979 **Proceedings of the seventh ACM symposium on Operating systems principles SOSP '79**
**Publisher:** ACM Press

Full text available: pdf(888.17 KB)

 Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

The file system and modularization of a single-user operating system are described. The main points of interest are the openness of the system, which establishes no sharp boundary between itself and the user's programs, and the techniques used to make the system robust.

### 82 [The TickerTAIP parallel RAID architecture](#)



Pei Cao, Swee Boon Lin, Shivakumar Venkataraman, John Wilkes

 August 1994 **ACM Transactions on Computer Systems (TOCS)**, Volume 12 Issue 3

**Publisher:** ACM Press

Full text available: pdf(2.04 MB)

 Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

Traditional disk arrays have a centralized architecture, with a single controller through which all requests flow. Such a controller is a single point of failure, and its performance limits the maximum number of disks to which the array can scale. We describe TickerTAIP, a parallel architecture for disk arrays that distributes the controller functions across several loosely coupled processors. The result is better scalability, fault tolerance, and flexibility. This article presents ...

**Keywords:** RAID disk array, decentralized parity calculation, disk scheduling, distributed controller, fault tolerance, parallel controller, performance simulation

### 83 [A speculation-based approach for performance and dependability analysis: a case study](#)

Yiqing Huang, Zbigniew Kalbarczyk, Ravishankar K. Iyer

 December 1998 **Proceedings of the 30th conference on Winter simulation WSC '98**
**Publisher:** IEEE Computer Society Press

Full text available: pdf(86.40 KB)

 Additional Information: [full citation](#), [references](#), [index terms](#)

84

### [Selected writings on computing: a personal perspective](#)

Updated Search  
10/776,031



Welcome United States Patent and Trademark Office

[Search Session History](#)      [BROWSE](#)      [SEARCH](#)      [IEEE XPLORE GUIDE](#)      [SUPPORT](#)

Tue, 15 May 2007, 1:12:10 PM EST

Edit an existing query or compose a new query in the Search Query Display.

Search Query Display

Select a search number (#) to:

- Add a query to the Search Query Display
- Combine search queries using AND, OR, or NOT
- Delete a search
- Run a search

Recent Search Queries

Results

#1	(( write back<in>metadata ) <and> ( failed disk<in>metadata ) ) <and> ( logical block address<in>metadata )	0
#2	(( recover<in>metadata ) <and> ( failed disk sector<in>metadata ) ) <and> ( write back primay disk<in>metadata )	0
#3	(( logical block address or lba<in>metadata ) <and> ( replacement or remapp or recover<in>metadata ) ) <and> ( failed disk sector<in>metadata )	0
#4	(( recover or remap or replacement<in>metadata ) <and> ( disk or lba<in>metadata ) ) <and> ( failed or error or malfunction or problem<in>metadata )	4245
#5	(( recover or remap or replacement<in>metadata ) <and> ( disk or lba<in>metadata ) ) <and> ( failed or error or malfunction or problem<in>metadata )	4245
#6	(( recover or remap or replacement<in>metadata ) <and> ( disk read error<in>metadata ) ) <and> ( logical block address or lba<in>metadata )	0



## EAST Search History

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	2203	(714/6).ccls.	US-PGPUB; USPAT; USOCR	OR	ON	2007/05/15 13:27
L2	718	(714/7).ccls.	US-PGPUB; USPAT; USOCR	OR	ON	2007/05/15 13:27
L3	480	(714/8).ccls.	US-PGPUB; USPAT; USOCR	OR	ON	2007/05/15 13:27
L4	1329	(714/25).ccls.	US-PGPUB; USPAT; USOCR	OR	ON	2007/05/15 13:27
L5	579	(714/710).ccls.	US-PGPUB; USPAT; USOCR	OR	ON	2007/05/15 13:27
L6	258	(714/711).ccls.	US-PGPUB; USPAT; USOCR	OR	ON	2007/05/15 13:27
L7	291	(714/723).ccls.	US-PGPUB; USPAT; USOCR	OR	ON	2007/05/15 13:28
L8	15255	(detect\$3 or track\$3 or check\$3) same (defect\$3 or error\$3 or fault\$ or bad or dirty or problem or malfunction or fail\$3) same sector	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/05/15 13:28
L9	5961	(replacement or remapp\$3 or substitut\$3 or recover\$3 or mirror or primary or redindant) adj (sector or block)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/05/15 13:28
L10	567	L8 AND L9	US-PGPUB; USPAT; USOCR	OR	ON	2007/05/15 13:30
L11	2440	(primary or mirror or redundant) adj disk	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/05/15 13:30

## EAST Search History

L12	559	(write 4 or write-back or "write back") same L11	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/05/15 13:30
L13	1018860	((logical adj block address) or LBA)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/05/15 13:30
L14	384	L11 AND L12 AND L13	US-PGPUB; USPAT; USOCR	OR	ON	2007/05/15 13:31
L15	4	14 AND 8 and 9	US-PGPUB; USPAT; USOCR	OR	ON	2007/05/15 13:31
L16	11	14 AND 8 and 1	US-PGPUB; USPAT; USOCR	OR	ON	2007/05/15 13:32
L17	7	14 AND 8 and 2	US-PGPUB; USPAT; USOCR	OR	ON	2007/05/15 13:32
L18	3	14 AND 8 and 3	US-PGPUB; USPAT; USOCR	OR	ON	2007/05/15 13:33
L19	0	14 AND 8 and 4	US-PGPUB; USPAT; USOCR	OR	ON	2007/05/15 13:33
L20	1	14 AND 8 and 5	US-PGPUB; USPAT; USOCR	OR	ON	2007/05/15 13:33
L21	0	14 AND 8 and 6	US-PGPUB; USPAT; USOCR	OR	ON	2007/05/15 13:34
L22	0	14 AND 8 and 7	US-PGPUB; USPAT; USOCR	OR	ON	2007/05/15 13:34